

A Taxonomic Revision of the Clavigerine Genus *Cerylambus* (Insecta, Coleoptera, Staphylinidae, Pselaphinae)

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Abstract The clavigerine genus *Cerylambus* Newton et Chandler is a replaced name for the junior homonym *Amblycerus* Raffray described from Penang, Malaysia. Two new species, *C. thailandicus* from Thailand and *C. maruyamai* from the Malay Peninsula are described. The type species, *C. reticulatus* is redescribed with first records from Vietnam.

Key words: Coleoptera, Staphylinidae, Pselaphinae, *Cerylambus*, new species.

The clavigerine species, *Cerylambus reticulatus* was originally described from Penang Island by Raffray (1895). The type locality of this species was recorded “Singapore” probably by mistake in Raffray (1905, 1908, 1911) and Newton and Chandler (1989). This species was designated as the type species of the genus *Amblycerus* by monotypy, and has been the only member of this genus until now. The generic name *Amblycerus* is preoccupied after Newton and Chandler (1989), who gave it a new name *Cerylambus*. The type species is very distinct in the coarsely punctate head and pronotum and the circular or ovoid densely setose area at the apex of antenna.

In the present study, *C. reticulatus* is recorded for the first time from Vietnam on the basis of recent material collected by the authors, and is redescribed in detail on the basis of observations by SEM. This species was recently recorded from Khao Yai National Park in Thailand by Nomura *et al.* (2008) Two new species discovered from Thailand and Malaysia are also described.

Material and Methods

The material was examined by a scanning electron microscope (SEM: JEOL JSM-6380LV). For the SEM observations; some specimens were coated with gold and observed under the condition with an accelerating voltage of 15–20 kV. The other non-coated material were examined with a low acv 0.9 kV. All materials were digital-micrographed from various angles. Scale bars in all figures are in micrometres. Measurements of the body and parts were made by Nomura with a stereo microscope (Leica MZ Apo).

All the holotypes of the new species are deposited in the National Museum of Nature and Science, Tokyo (NSMT). Paratypes are going to be shared by NSMT and the following institutions: Institute of Ecology and Biological Resources, Vietnamese Academy of Science and Technology, Hanoi (IEBR); School of Environmental and Natural Resource Sciences, Faculty of Sciences and Technology, Universiti Kebangsaan Malaysia, Bangi, Selangor (UKM); Insect Museum, Department of Entomology, Kasetsart University, Bangkok (IMKU). Type material

examined of *Cerylambus reticulatus* Raffray is preserved in the Muséum National d'Histoire Naturelle, Paris (MNHN).

Taxonomic Account

Genus *Cerylambus* Newton et Chandler

Amblycerus Raffray, 1895, Rev. Ent., Caen, 14: 79.

Cerylambus Newton and Chandler, 1989, Fiel-

diana, Zoology, (N. S.), (53): 64.

Type species: *Cerylambus reticulatus* (Raffray) by monotypy.

Remarks. This genus is easily distinguished from the other clavigerine genera by having the very coarsely punctate head and pronotum and the three-segmented antenna with dense long setae at apex.

A Key to the Species of the Genus *Cerylambus*

1. Abdominal paratergites normal on both lateral sides, without apophysis. *C. maruyamai* sp. nov.
- Abdominal paratergites each with a large, posterolaterally projected lateral apophysis in basal part. 2
2. Pronotum covered with dense and minute punctures on dorsal surface, 7 to 8 punctures aligned longitudinally on lateral side. *C. thailandicus* sp. nov.
- Pronotum covered with coarse and sparse punctures on dorsal surface, 5 to 6 punctures aligned longitudinally on lateral side. *C. reticulatus* (Raffray)

Cerylambus thailandicus sp. nov.

(Figs. 1A–B, 2–4)

Etymology. The specific name of this new species is derived from the type locality.

Material examined. Holotype male, by FIT (M), Doi Suthep, Chiang Mai, Thailand, 13–20. v. 2003, M. Maruyama leg.

Description. Male (Fig. 1A–B). Body length 1.81 mm, width 0.82 mm, very broad and thick in elytra and abdomen, narrow in head and pronotum, color reddish brown, shiny.

Head (Fig. 2A–D) 1.4 times as long as wide, subcylindrical, gently narrowed anteriad, densely covered with coarse, deep punctures; clypeus short, flat, arcuate on anterior margin; frons elevated, convex anterodorsally, parallel-sided inside eyes; vertex hardly convex; genae slightly expanded anterolaterad; postgenae angulate in dorsal view; gular area smooth, with a pair of deep gular foveae. Eyes ovoid, weakly convex, each composed of 15 facets. Mouthparts strongly reduced, almost invisible in anterior view. Antennae (Fig. 2E–F) elongate, thick, 0.50 mm in

length, 0.11 mm in width, 3-segmented; segment I very short, annular, invisible in dorsal view; II short, about as long as wide, cylindrical; III predominantly large, elongate, narrow in basal 1/3, thick, weakly broadened distad in apical 2/3, sparsely covered with long setae in apical 2/3, with circular setose area at apex, weakly convex, densely with long setae in the setose area.

Pronotum (Fig. 2A) slightly shorter than head, slightly wider than long, almost parallel-sided in basal 2/3, abruptly narrowed anteriad in apical 1/3, densely covered with regular coarse punctures, 7–8 punctures aligned longitudinally on lateral side, broadly limbate along posterior margin. Elytra (Fig. 3C) twice as long as pronotum, 1.3 times as long as wide, gently narrowed anteriad; each elytron weakly convex on dorsal side, uniformly covered with coarse reticulation. Metasternum (Fig. 2H) broad, weakly convex, smooth in median part, with a pair of triangular areas behind mesocoxae, densely covered with very coarse punctures within the triangular areas. Legs (Figs. 2G, 3A–B) short, thick; trochanters very long, slender, each slightly shorter than the

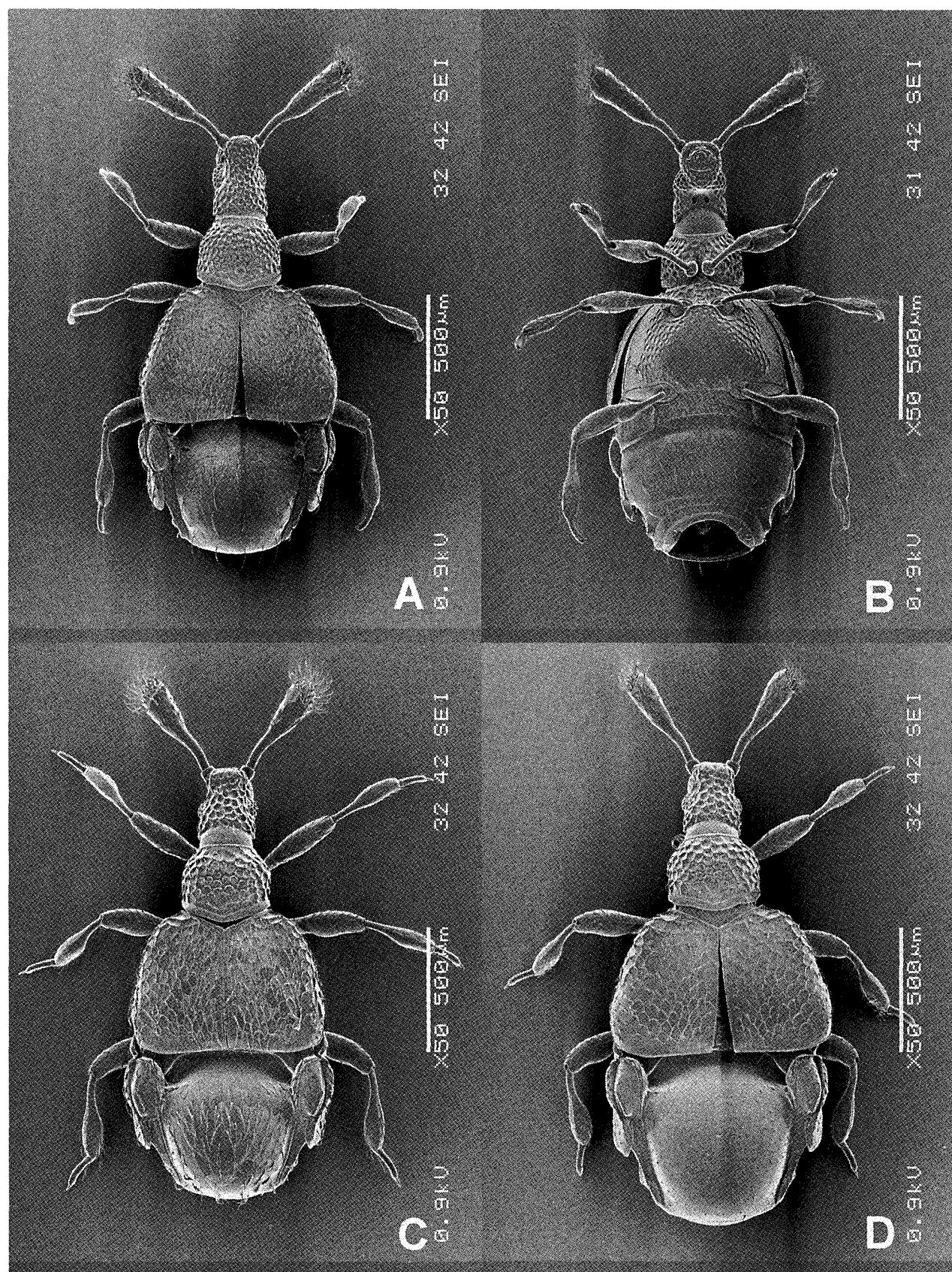


Fig. 1. *Cerylambus* spp., habitus. — A, *C. thailandicus* sp. nov., holotype in dorsal view; B, ditto, in ventral view; C, *C. reticulatus* Raffray, male in dorsal view; D, ditto, female in dorsal view.

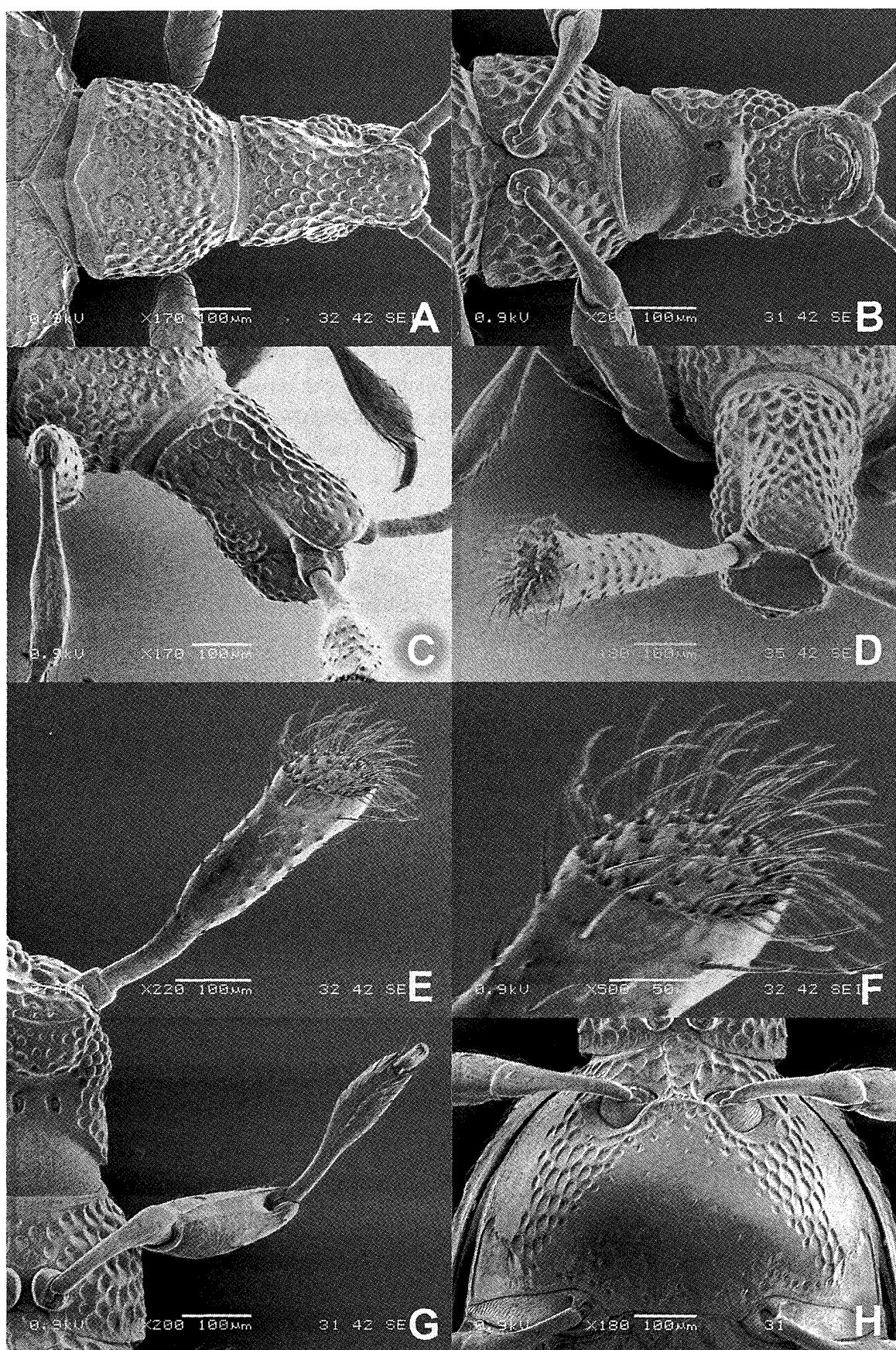


Fig. 2. *Cerylambus thailandicus* sp. nov., holotype, male — A, head and pronotum in dorsal view; B, ditto, in ventral view; C, ditto, in lateral view; D, ditto, in anterior view; E, male antenna; F, ditto, enlarged; G, fore leg in ventral view; H, meso- and metasterna in ventral view.

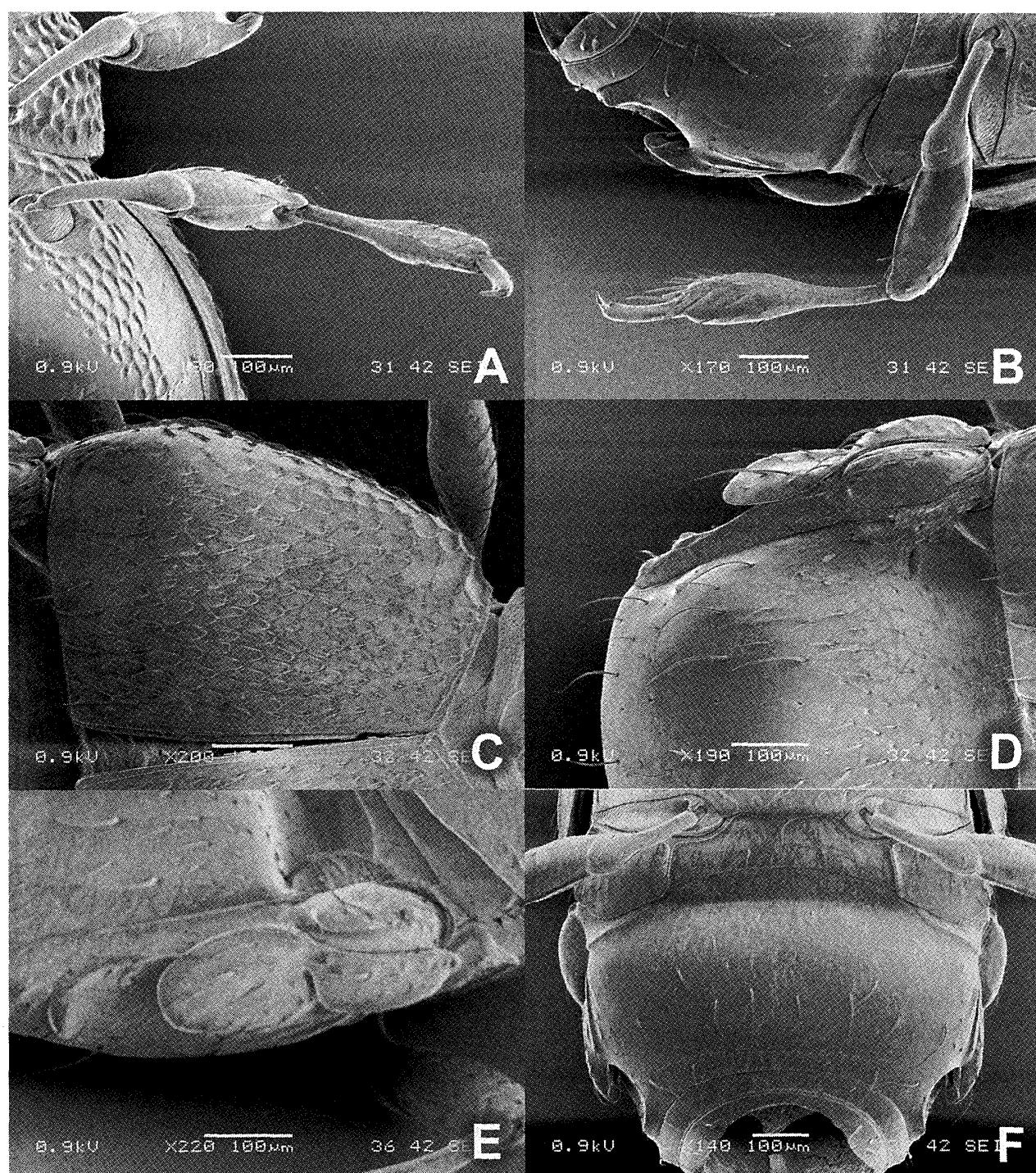


Fig. 3. *Cerylambus thailandicus* sp. nov., holotype, male — A, mid leg in ventral view; B, hind leg in ventral view; C, elytra in dorsal view; D, abdomen in dorsal view; E, lateral apophysis in lateral view; F, abdomen in ventral view.

following femur; femora very thick; tibiae each slender in basal 1/3, thickened in apical 2/3; tarsi short, stout, consisting of very short segments I, II, and predominantly long III, with a dull denticle at ventral side of apex; pretarsi each with a single claw.

Abdomen (Fig. 3D-F) large, about as long as elytra, slightly wider than elytra, 1.4 times as wide as long, widest at base, gently narrowed posteriad, truncate at apex, strongly convex in posterior part, deeply concave near base; composite tergum (tergites III to VI) very large,

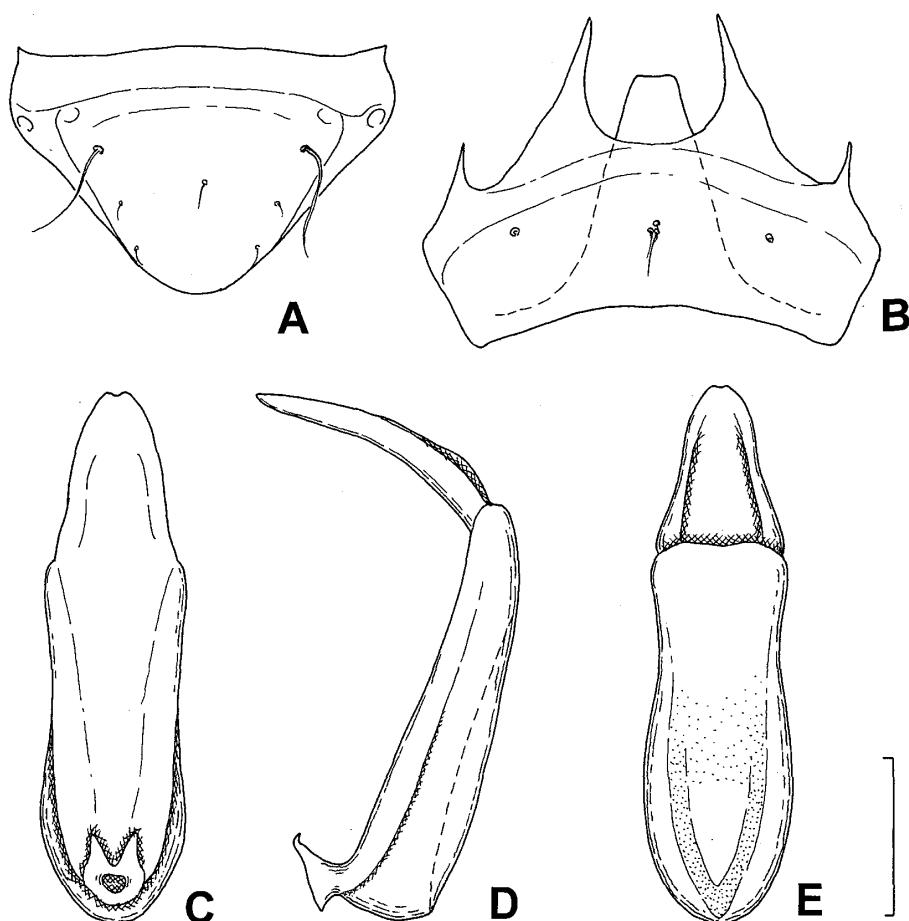


Fig. 4. *Cerylambus thailandicus* sp. nov., holotype, male — A, tergite VIII; B, sternite VIII; C, male genitalia in ventral view; D, ditto, in lateral view; E, ditto, in dorsal view. Scale: 0.1 mm.

weakly narrowed posteriad, sparsely covered with long erect setae, with a deep basal concavity and a pair of short, oblique lateral carinae at basilateral corners; paratergites IV to VI each demarcated, with a pair of large lateral apophyses (Fig. 3E) outside paratergites IV to V; lateral apophysis large, elongate, comprised from semicircular basal lobe and elliptical apical lobe; paratergite IV largest, convex dorsally, with a narrow trichome along inner margin; V about as long as IV, elongate, narrowed posteriorly; VI small, elongate; sternite III short, transverse, with a pair of lateral longitudinal carinae and a short basimedian carina; IV predominantly large, wider than long, with a pair of short, oblique carinae in basilateral parts; V very short, with a pair of very large, deep lateral excavations just behind posterior ends of lateral apophysis; VI very short, about as long as V in median part; segment VII

very short, invisible in dorsal view; tergite VIII (Fig. 4A) nearly triangular, wider than long, with a pair of basilateral foveae and a pair of long setae just behind basilateral foveae; sternite VIII (Fig. 4B) transverse, with a basimedian inner process at base, and with a pair of basal projections and a few short erect setae at the middle point.

Male genitalia (Fig. 4C–E) well-sclerotized, elongate; basal bulb of median lobe nearly parallel-sided in apical 2/3, rounded near base, with a well projected basal foramen on ventral side, and with a V-shaped membranous part on basidorsal side; apical lobe narrowed distally, with a shallow, broad longitudinal groove on basidorsal side.

Female unknown.

Distribution. Thailand (Chiang Mai).

Remarks. This new species is closely allied

to the type species *C. reticulatus*, but separable by having the denser and more minute punctuation of pronotum.

***Cerylambus reticulatus* (Raffray)**

(Figs. 1C–D, 5–8)

Amblycerus reticulatus Raffray, 1895, Rev. Ent., Caen, 14: 79.

Cerylambus reticulatus: Newton and Chandler, 1989, Fieldiana, Zoology, N. S., (53): 64.

Type examined. Holotype (monotypy), female (MNHN), Penang/Muséum Paris 1917, Coll A. Raffray/A. *reticulatus*, A. Raffray det.

Other material examined. 2 males, Dam B'Ri Waterfall (ca. 800 m), nr. Bao Loc, Lam Dong Prov., S-Vietnam, 1–3. v. 2000, S. Nomura leg.; 5 males, 1 female, same data as above, but 2–3. viii. 2001; 1 male, same data as above, but 30. v. 2002; 1 female, same data as above, but 26. iv. 2003; 1 male, 5 females, Do Quyen (1,100 m), nr. Bach Ma, Thua Thien Hue Prov., C-Vietnam, 26–27. vii. 2001, S. Nomura leg.; 4 females, Mt. Bach Ma (1,200 m), Thua Thien Hue Prov., C-Vietnam, 8–10. vi. 2002, S. Nomura leg.; 1 male, 2 females, by FIT, Mt. Bach Ma (1,150 m), Thua Thien Hue Prov., C-Vietnam, 5–10. v. 2003, S. Nomura leg.; 1 female, by FIT, Mt. Bach Ma (1,300 m), Thua Thien Hue Prov., C-Vietnam, 6–9. v. 2003, S. Nomura leg.

Redescription. Male (Fig. 1C–D). Body length 1.84–1.95 mm, width 0.90–0.93 mm, broad and thick in elytra and abdomen, narrow in head and pronotum, color reddish brown, shiny.

Head (Fig. 5A–D) slightly longer than wide, subcylindrical, feebly narrowed anteriad, densely covered with very coarse punctures; clypeus short, flat, almost horizontal on anterior margin; frons convex anterodorsally, subparallel-sided before eyes; vertex hardly convex; genae weakly expanded anterolaterad; postgenae angulate in dorsal view; gular area smooth, concave, with a pair of deep gular foveae. Eyes ovoid, weakly convex, each composed of 20 facets. Mouthparts less reduced than in *C. thailandicus*; labrum very short, transversely trapezoidal; mandibles very

short, symmetrical, arcuate on anterolateral margins; maxillae each reduced to two small sclerites (galea and palpus?); labium nearly square, rounded on anterior margin. Antennae (Fig. 5E–H) elongate, thick, 0.49–0.56 mm in length, 0.12–0.14 mm in width; segment I very short, annular; II slightly longer than I, slightly wider than long; III predominantly large, slender and glabrous in basal 2/5, thickened distally and sparsely covered with setae in apical 3/5, with an ovoid setose area, strongly convex and densely covered with long setae within the setose area.

Pronotum (Fig. 5A) as long as head, wider than long, subcylindrical, parallel-sided in posterior 3/4, narrowed anteriorly in anterior 1/4, densely covered with very coarse punctures, 5–6 punctures aligned longitudinally on lateral side, broadly limbate on posterior margin. Elytra (Fig. 6A, C–F) about twice as long as pronotum, 1.4 times as wide as long, feebly convex on dorsal side, densely covered with very coarse reticulation and long setae; each elytron with a strong longitudinal carina along outer margin on inner surface, densely covered with scale-like microstructures in peripheral parts. Hind wings (Figs. 6G–H, 7A–B) developed. Metasternum (Fig. 6B) broad, weakly convex, smooth in posteromedian part, densely covered with very coarse reticulation in anterior and lateral parts. Legs (Fig. 7C–F) short and thick, almost same as those of *C. thailandicus*.

Abdomen (Fig. 7G–H) large, slightly longer than elytra, about 1.5 times as wide as long, weakly narrowed posteriad, truncatae at apex, almost the same in structure as that of *C. thailandicus*; paratergites III to VI each demarcated; lateral apophyses each almost the same as that of *C. thailandicus*; III very short; IV wider than in *C. thailandicus*; V narrower than in *C. thailandicus*; VI very short, narrow; tergite VIII (Fig. 8A) small and transverse, almost the same as that of *C. thailandicus*; sternite VIII (Fig. 8B) transverse, with a large and trapezoid extention on inner side.

Male genitalia (Fig. 8C–E) well sclerotized, elongate, symmetrical, almost the same in struc-

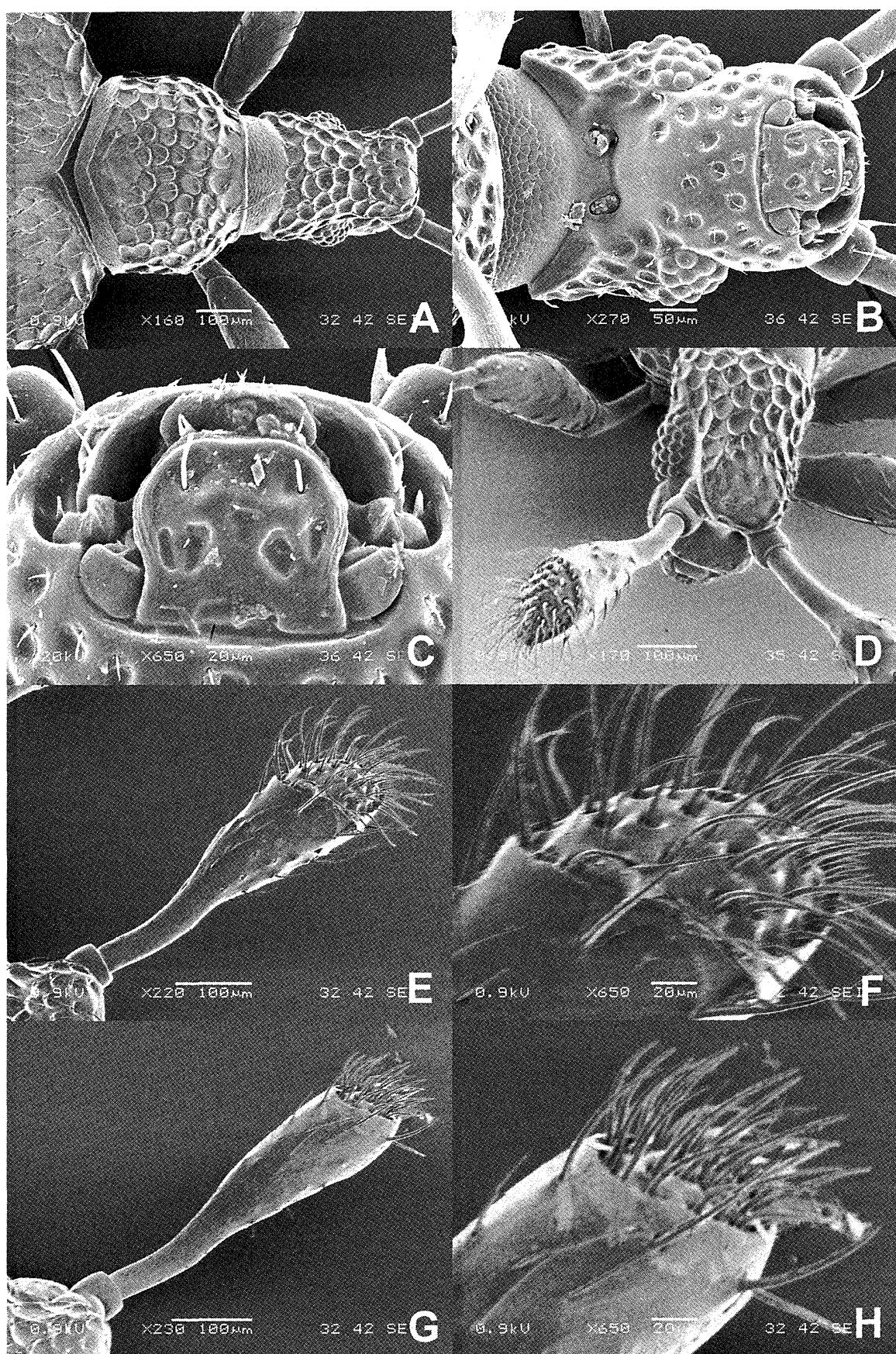


Fig. 5. *Cerylambus reticulatus* (Raffray) — A, male head and pronotum in dorsal view; B, female head in ventral view; C, female mouthparts in ventral view; D, male head in anterior view; E, male antenna; F, ditto, enlarged; G, female antenna; H, ditto, enlarged.

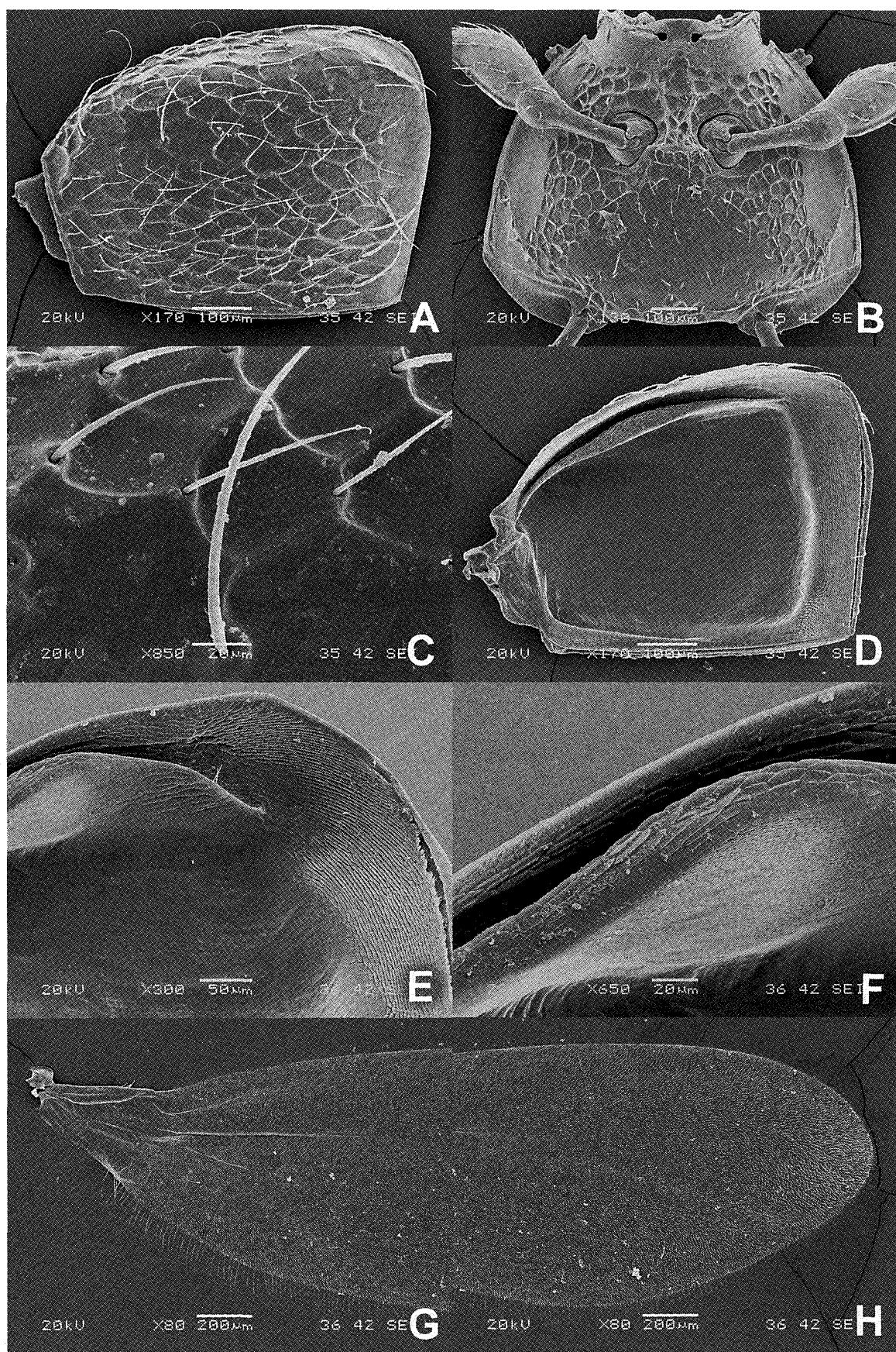


Fig. 6. *Cerylambus reticulatus* (Raffray) — A, female elytron in dorsal view; B, female meso- and metasterna in ventral view; C, female elytra enlarged; D, ditto, in internal view; E, ditto, posterolateral part enlarged; F, ditto, lateral part enlarged; G, female hind wing, basal part; H, ditto, apical part.

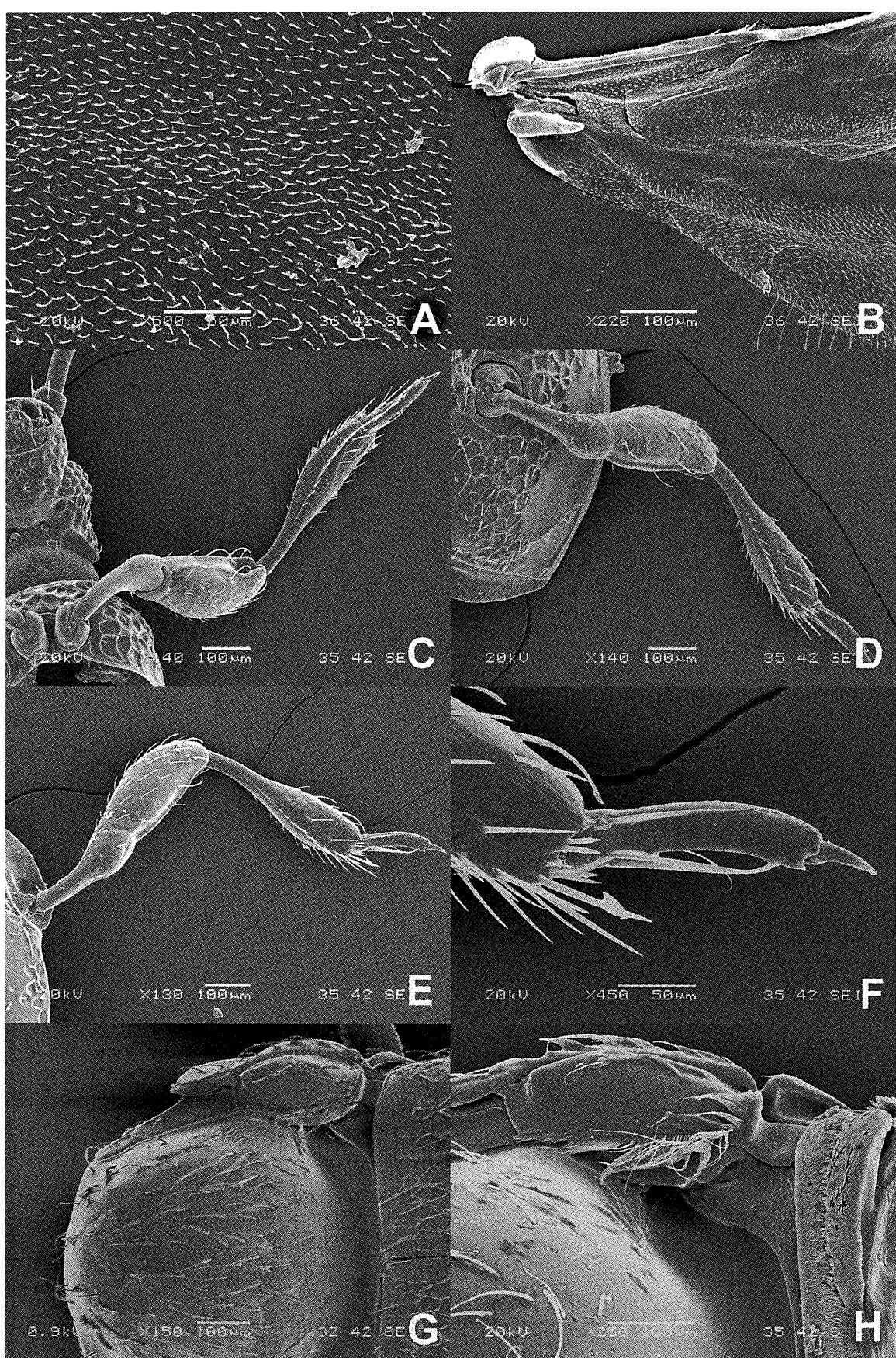


Fig. 7. *Cerylambus reticulatus* (Raffray), female. — A, female hind wing, middle part enlarged; B, ditto, basal part enlarged; C, fore leg in ventral view; D, mid leg in ventral view; E, hind leg in ventral view; F, hind tarsus enlarged; G, abdomen in dorsal view; H, ditto, basal part enlarged.

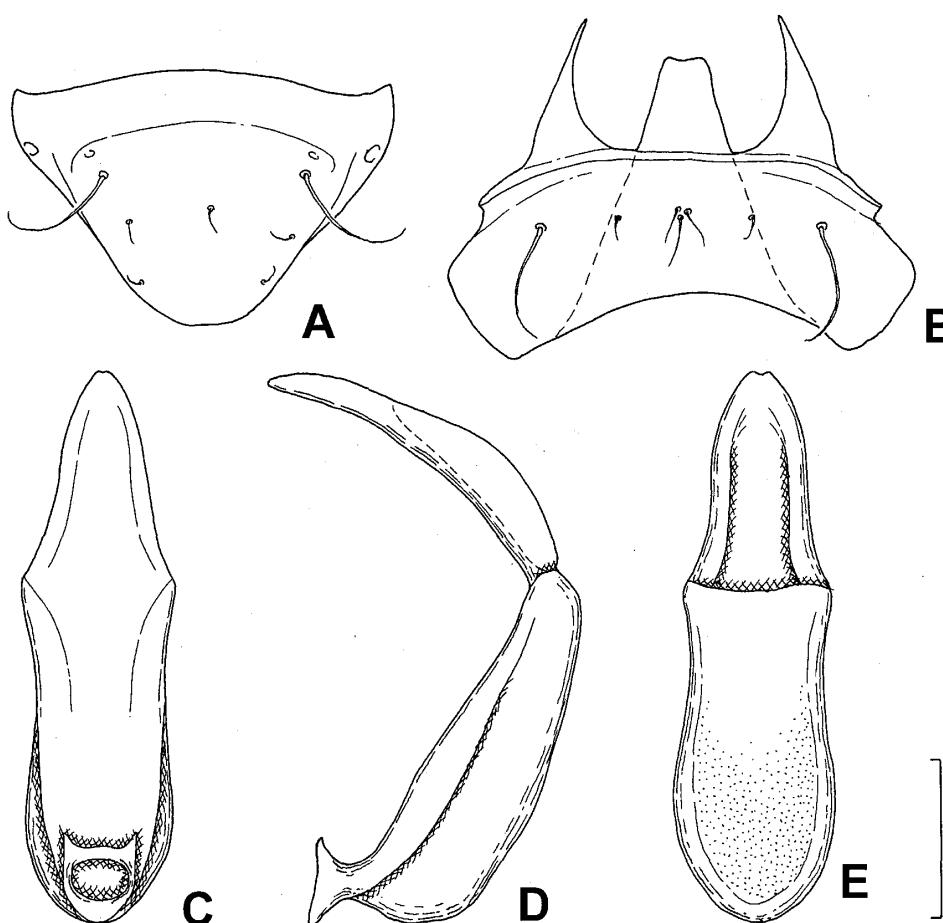


Fig. 8. *Cerylambus reticulatus* (Raffray), male — A, tergite VIII; B, sternite VIII; C, male genitalia in ventral view; D, ditto, in lateral view; E, ditto, in dorsal view. Scale: 0.1 mm.

ture as that of *C. thailanicus*; basal bulb of median lobe thicker and shorter than in *C. thailanicus*, with larger basal foramen than in *C. thailanicus*, with basally rounded membranous part on dorsal side; apical lobe longer than in *C. thailanicus*, about as long as basal bulb.

Female. Body length 1.93–2.02 mm, width 0.93–1.02 mm. Antennae 0.49–0.55 mm in length, 0.11–0.12 mm in width. Very similar to male, but the antennae each is slightly slenderer than that of male, with smaller setose area at the apex than in male.

Distribution. Thailand, Vietnam, Malaysia (Penang Is.).

Remarks. This species is very similar to *C. thailanicus*, but separable by the slightly larger body, the head and pronotum covered with coarser punctures than in *thailanicus*, and the different features of the male genitalia.

As to the type material of this species, the holotype was collected from Penang Island, Malaysia after the original description. The label of the holotype is coincident with the description. However, the type locality of this species is recorded as "Singapore" in Raffray (1905) and the following literature. As far as the author Nomura searched within Raffray's Collection in MNHN, no material from Singapore is present. The type locality "Singapore" should therefore be an error in writing by Raffray.

Cerylambus maruyamai sp. nov.

(Figs. 9–13)

Etymology. The specific name of this new species is dedicated to one of the collectors of the type specimens, Dr. Munetoshi Maruyama

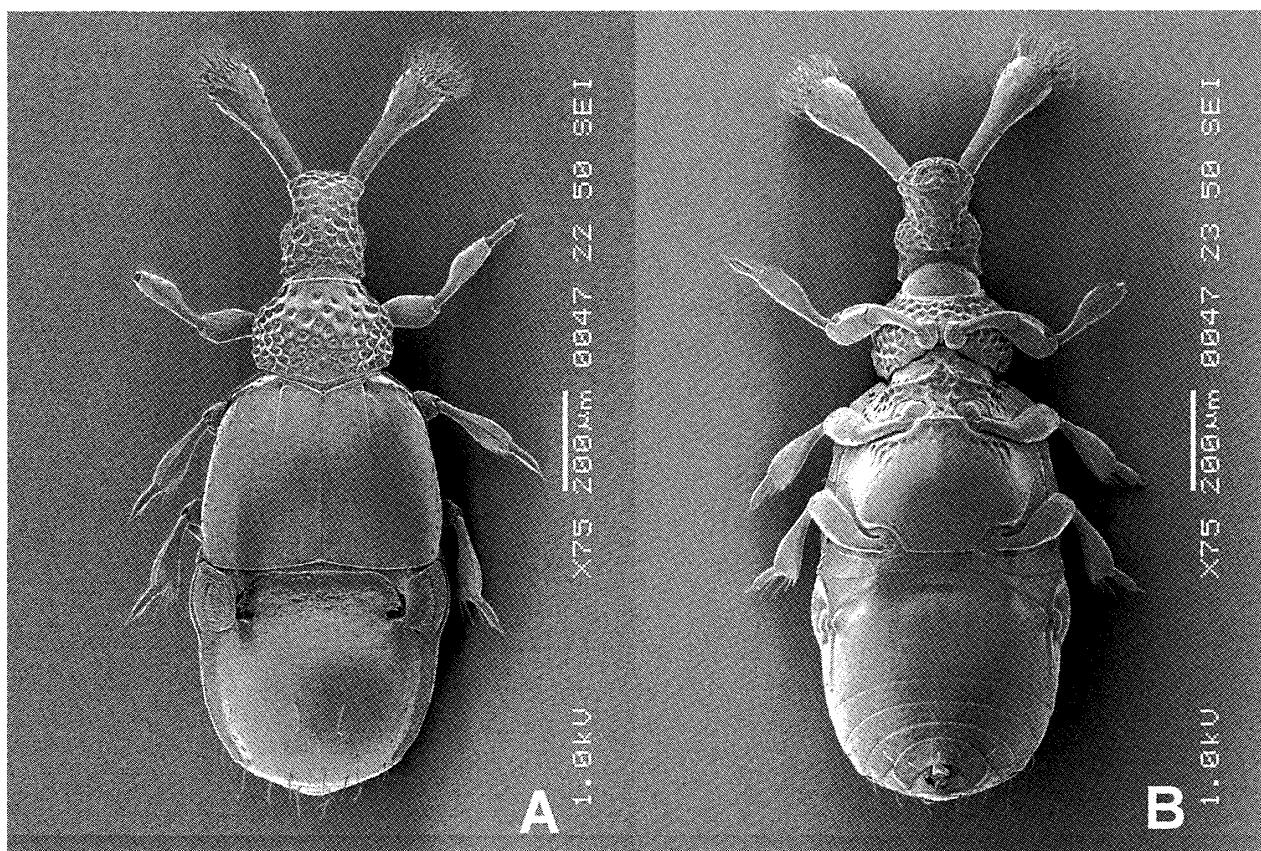


Fig. 9. *Cerylambus maruyamai* sp. nov., male — A, habitus in dorsal view; B, ditto, in ventral view.

who is an excellent specialist of myrmecophilous insects.

Material examined. Holotype male, Nr. gate (150–200 m), from ant nest, Endau-Rompin Nat. Res., Pahang, Malaysia, 23. vii. 2004, S. Nomura leg. Paratypes: 1 female, same data as holotype; 6 males, 1 female, FIT (M), outside gate, Endau-Rompin Nat. Res., Pahang, Malaysia, 12–19. v. 2005, Maruyama, Jinbo and Yamada leg.

Description. Male (Fig. 9). Body length 1.31–1.38 mm, width 0.53–0.58 mm, small, weakly narrowed in head and pronotum, color reddish brown, shiny.

Head (Fig. 10A–D) 1.4 times as long as wide, nearly tetragonal, feebly narrowed anteriad in basal 2/3, then gently broadened anteriad, densely, uniformly covered with very coarse punctures except for clypeus; clypeus short, almost invisible in dorsal view, arcuate on anterior margin; frons broad, slightly convex; vertex feebly convex; genae weakly expanded anterolaterad; postgenae gently angulate; gular area concave, almost

smooth, with a pair of deep foveae. Eyes small, ovoid, each composed of about 20 facets. Mouthparts (Fig. 10G–H) reduced; labrum very small, deeply emarginate in anteromedian part, bisinuate on anterior margin; mandibles short, arcuately expanded anterolaterad; maxillae thick, each with a long bristle at middle of stipes; maxillary palpi each short, thickened at apex, with a few short bristles at anterior side of apex; labium small, semicircular. Antennae (Fig. 10E–F) short and thick, 0.30–0.33 mm in length, 0.09–0.11 mm in width, 3-segmented; segment I very short, annular; II short, wider than long, almost invisible in dorsal view; III the largest, elongate, narrow in basal half, strongly thick in apical half, with semispherical setose area at apex.

Pronotum (Fig. 10A) about as long as head, 1.3 times as wide as long, convex on dorsal and lateral sides, densely covered with irregular coarse punctures, with three pairs of long setae in anterolateral parts. Meso- and metasterna (Fig. 11A–B) broad, densely covered with coarse,

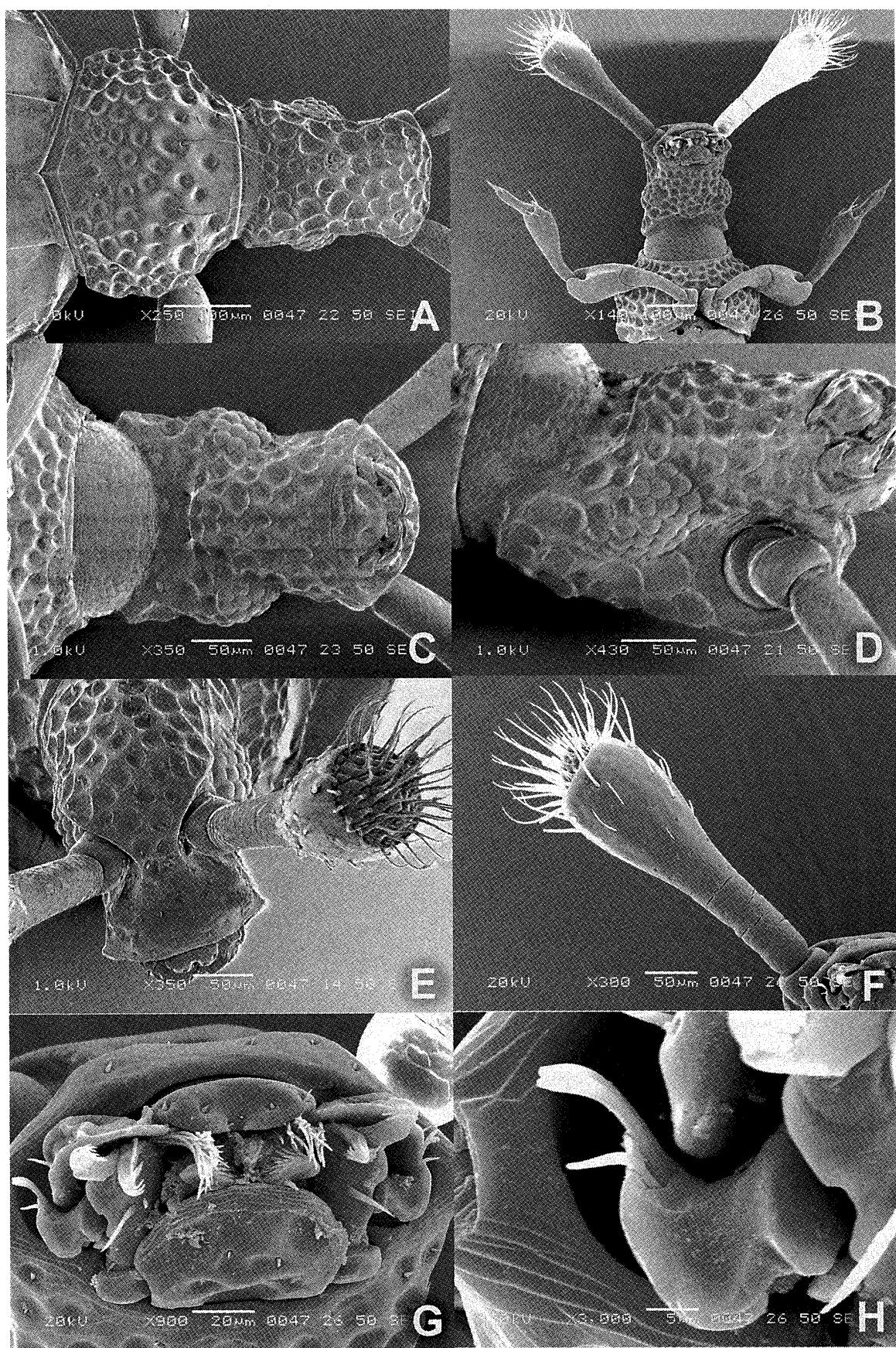


Fig. 10. *Cerylambus maruyamai* sp. nov. — A, male head and pronotum in dorsal view; B, ditto, in ventral view; C, female head in ventral view; D, ditto, in lateral view; E, male head in anterior view; F, male antenna; G, male mouthparts in anterior view; H, male maxillary palpus enlarged.

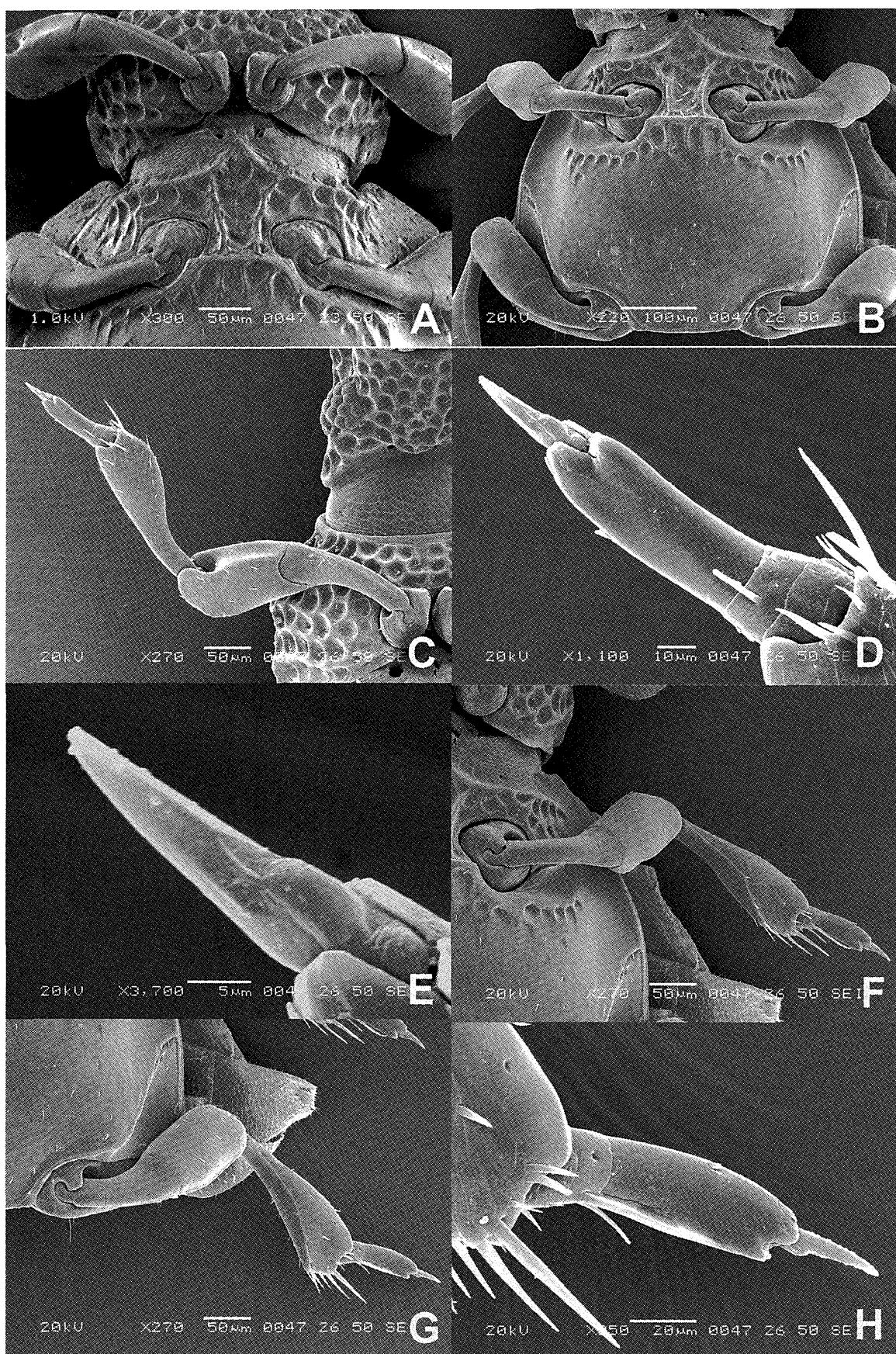


Fig. 11. *Cerylambus maruyamai* sp. nov. — A, female pro- and mesosterna in ventral view; B, male meso- and metasterna in ventral view; C, male fore leg in ventral view; D, fore tarsus enlarged; E, fore tarsal claw enlarged; F, male mid leg in ventral view; G, male hind leg in ventral view; H, hind tarsus enlarged.

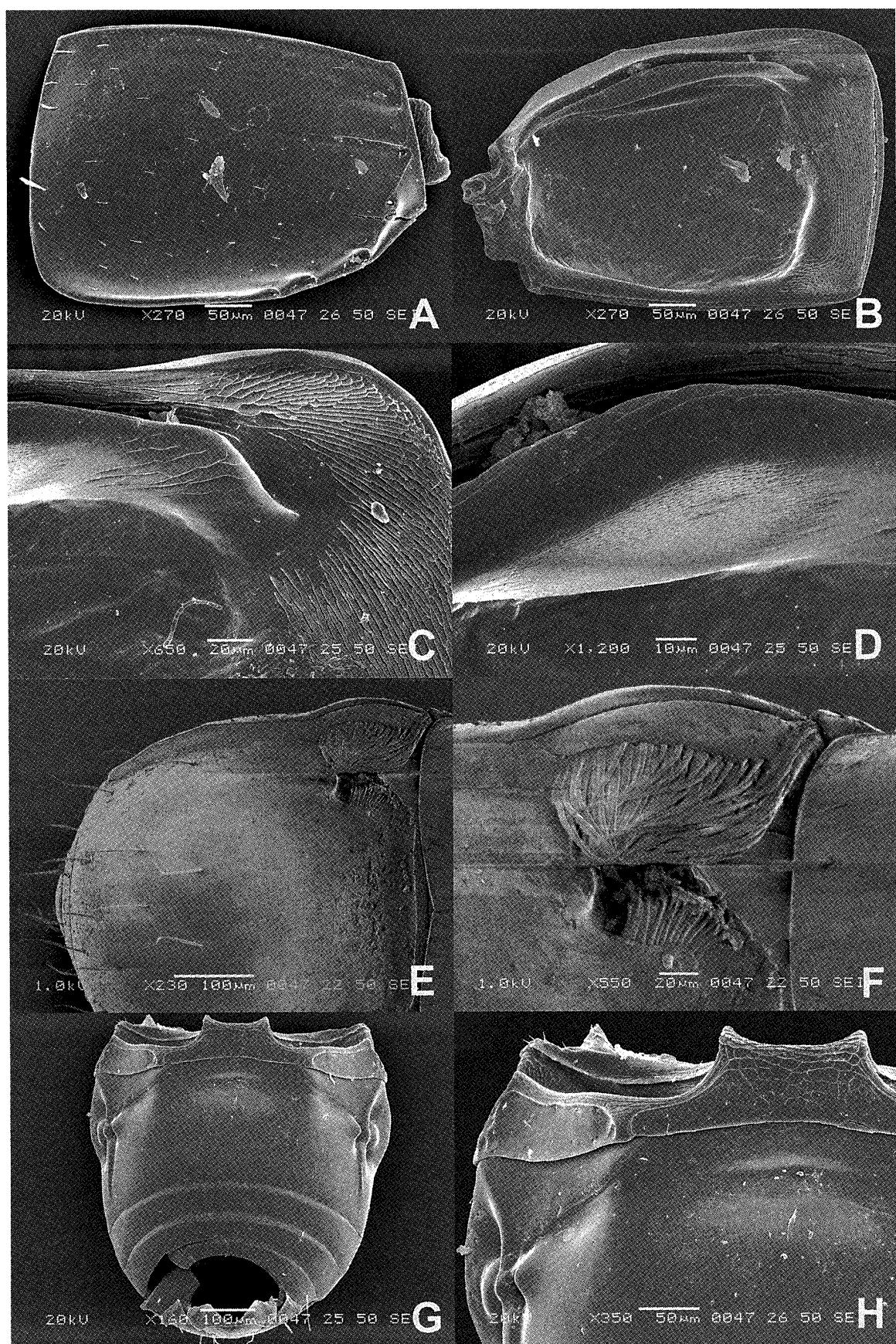


Fig. 12. *Cerylambus maruyamai* sp. nov., male — A, elytron in dorsal view; B, ditto, in internal view; C, ditto, posterolateral part enlarged; D, ditto, lateral part enlarged; E, abdomen in dorsal view; F, ditto, basal part enlarged; G, abdomen in ventral view; H, ditto, basal part enlarged.

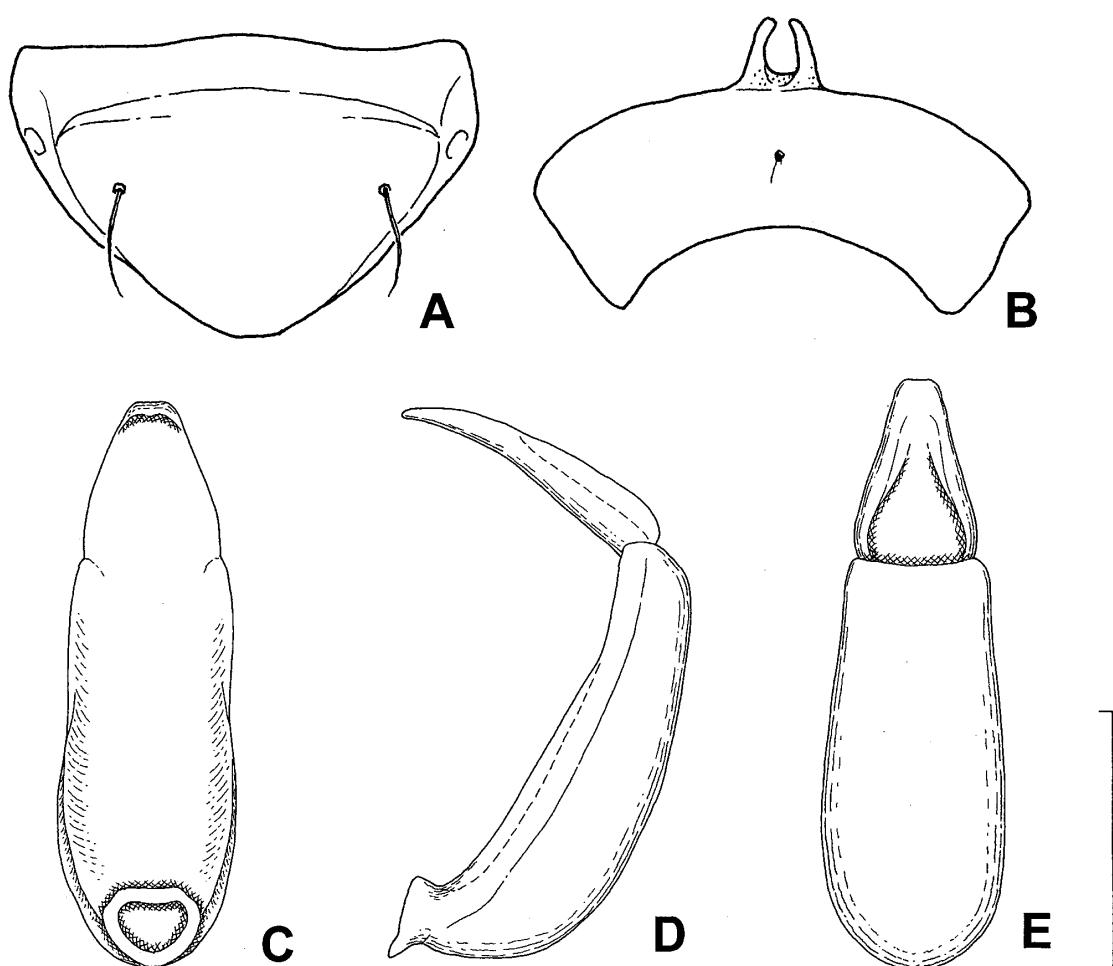


Fig. 13. *Cerylambus maruyamai* sp. nov., male — A, tergite VIII; B, sternite VIII; C, male genitalia in ventral view; D, ditto, in lateral view; E, ditto, in dorsal view. Scale: 0.1 mm.

shallow punctures in anterior part, with a short, strong transverse carina connecting mesocoxal cavities, weakly convex and almost smooth in posteroventral surface. Legs (Fig. 11C, F, G) short and thick; trochanters very large, elongate, each strongly thickened distad; femora each about as long as foregoing trochanter, very thick, with large longitudinal groove on inner side; tibiae short and thick, strongly broadened distad, with a longitudinal carina on ventral side in mid and hind tibiae; tarsi (Fig. 11D, E, H) each cylindrical, with single claw. Elytra (Fig. 12A–D) broad, wider than long, weakly convex, very sparsely covered with short setae on dorsal surface; each elytron nearly tetragonal, limbate on inner, anterior and lateral margins, with two basal foveae, a short longitudinal carina running from outer basal fovea to anterior 1/3, and three mar-

ginal depressions along anterolateral margin on dorsal side, and with a strong longitudinal carina along outer margin, densely covered with scale-like microstructures in peripheral parts on inner side.

Abdomen (Fig. 12E–H) slightly larger than elytra, wider than long, widest near base, gently narrowed posteriad, rounded at apex; composite tergites broadly concave in basimedian part, convex in middle to apical parts, almost smooth and sparsely covered with long setae in posterior part, with a pair of small trichomes just inside paratergite IV; paratergites very narrow and flat, successively narrowed and shortened posteriad; paratergite IV each with large elliptical trichome on inner side; sternite III very short, with a pair of very short longitudinal carinae in posterolateral parts; IV predominantly large, weakly depressed

in basimedian part, almost smooth on ventral surface, with a pair of very broad depressions on basilateral sides, a pair of small foveae just inside basilateral depressions, and a pair of narrow oblique sulci running from basilateral foveae to near posterior end of longitudinal carina of sternite III; V to VII each very short, transverse, successively shortened posteriad; tergite VIII (Fig. 13A) small, nearly triangular, with a pair of basilateral foveae and a pair of long lateral setae; sternite VIII (Fig. 13B) small, transverse, arcuately emarginate on posterior margin, with a small basimedian process on anterior margin.

Male genitalia (Fig. 13C–E) well sclerotized, almost the same in structure as those of *thailandicus* and *reticulatus*, but the basal capsule of median lobe hardly constricted on lateral side, basal foramen broader and less constricted than in both species, dorsal membranous part indistinct.

Female. Body length 1.40–1.44 mm, width 0.58 mm. Antennae 0.29 mm in length, 0.09 mm in width. Very similar to male, but the abdomen is slightly longer than in male, antennae each with smaller setose area at apex than in male.

Distribution. Malaysia (Pahang).

Remarks. This new species seems very different from *C. thailandicus* and *C. reticulatus* in having the normally shaped abdomen devoid of lateral apophyses and the smooth elytra with longitudinal sulci. However, there is no doubt of its similarity to these species by having the same structure of the head, antenna, pronotum and male genitalia.

Discussion

The genus *Cerylambus* belongs to the subtribe Clavigerodina of the tribe Clavigerini. This subtribe is considered to include two genus groups of the Asian genera, *Articerodes*- and *Anaclassiger*-groups defined by Nomura *et al.* (2008). The genus *Cerylambus* is a member of the *Anaclassiger*-group characterized by 1) The antenna is not truncate at apex, sometimes modified asymmetrically, 2) each elytron bears neither

basal fovea nor longitudinal carina in the basal part, and is lacking trichome or fringe on hind margin, 3) the mid coxae are distant from each other. However, the systematic position of this genus within the genus group is still indistinct. *Cerylambus maruyamai* sp. nov. having some primitive characters is similar to *Anaclassiger sinuaticollis* Raffray in having the elytra each with a lateral longitudinal carina and the basal structure of abdomen, but quite different in segmentation of the antenna and in pronotal structure.

Cerylambus maruyamai is clearly separated from the other members of this genus by having 1) the smooth elytra devoid of coarse reticulation, each with a basal fovea and a lateral longitudinal carina, and 2) the normal abdominal paratergites lacking lateral apophysis. As to the elytral structure 1), the fovea and carina are regarded as retained original structure of Clavigeritae as pointed out in Nomura *et al.* (2008). In the elytral characters of *C. thailandicus* and *C. reticulatus*, the original structure was completely lost and the reticulation possibly arose as a synapomorphic character. The lateral apophyses of abdominal paratergites shared by these two species are considered to have been secondarily obtained in the same way.

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